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10/673,532	09/29/2003	Jong-Yoon Hwang	678-508 CON	1828

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EXAMINER	
D AGOSTA, STEPHEN M	

ART UNIT	PAPER NUMBER
2683	

DATE MAILED: 05/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/673,532	HWANG ET AL.	
	Examiner	Art Unit	
	Stephen M. D'Agosta	2683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/03, 4/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 12, 14, 17 and 19 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The examiner is unclear as to what exactly is meant by "energy measuring". Is this something like Eb/No, SNR, Power, etc.? The specification does not appear to elaborate on exactly what the energy being measured is OR how it would be expressed in units (eg. dB, etc.). Please provide clarification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 5-7, 9-13, 17-18 and 21-24 rejected under 35 U.S.C. 102(e) as being anticipated by Chheda et al. US Patent 6,181,738 (hereafter Chheda).

As per **claim 1**, Chheda teaches a method of controlling reverse/forward link transmission power in a mobile system (title), where a mobile terminal generates a power control command based on a received frame [Note: forward power control is disclosed, C1, L55-65], said received frame including a plurality of slots, each of said plurality of slots including power control bits and non-power control bits (C4, L5-19 and L53-67 to C5, L1-14 discloses measuring all bits within a frame, hence PCB and non-PBC bits are included) the method comprising:

Providing a first ratio of an energy of the non-power control bits to an energy of the power control bits (C1, L66-67 thru C4, L33 teaches Eb/No as a measure of energy-to-noise which reads on the applicant's claim. Note that other measurements are possible including SNR, SIR, Eb/Nt, etc. which are known in the art).

Generating a power control command based on the ratio (C2, L52-57 and/or C3, L9-15. Note that forward power control works in a similar manner as is disclosed by Chheda above).

As per **claim 5**, Chheda teaches forward power control capable of discontinuous transmission mode, where a terminal generate power control commands comprising;

First step of determining energy of PCB's is more than a first threshold value, first threshold is minimum value for receiving data, Second step of determining that a channel state is good if the first step determines energy of PCB's is more that first threshold value, Third step of determining that the channel state is bad if the first step determines that the energy of the PCB's is less than the first threshold (C2, L13-25, teaches sustaining a certain FER and GOS. Providing less translates into dropping calls. The examiner interprets this as reading on the claim since FER/GOS involve determining if a channel is "good" and continually monitoring for fading/deterioration which then involves handoff. The examiner takes Official Notice that thresholds/reference levels AND the need for a minimum transmit power in order for RF communications to occur are known in the art. Note that Chheeda [C2, L35-42] teaches "target Eb/No" which is a predetermined threshold/reference).

As per **claim 6**, Chheda teaches claim 5 comprising

Fourth step determining whether data decoded prior to the first step has been correctly decoded if the frame includes CRC information (C2, L58-67 to C3, L1-3 and/or C4, L63-67 to C5, L1-25)

Fifth step determining the frame is good if the data has been correctly decode at step 4 or performing the first step if it is determined the data is not correctly decoded (C5, L22-24 teaches at least "one CRC passes" which means a good frame).

As per **claim 7**, Chheda teaches forward power control capable of discontinuous transmission mode, where a terminal generate power control commands comprising;

First step of determining energy of PCB's is more than a first threshold value, first threshold is minimum value for receiving data, Second step of determining that a channel state is good if the first step determines energy of PCB's is more that first threshold value, Third step of determining that the channel state is bad if the first step determines that the energy of the PCB's is less than the first threshold (C2, L13-25, teaches sustaining a certain FER and GOS. Providing less translates into dropping calls. The examiner interprets this as reading on the claim since FER/GOS involve determining if a channel is "good" and continually monitoring for fading/deterioration which then involves handoff. The examiner takes Official Notice that thresholds/reference levels AND the need for a minimum transmit power in order for RF communications to occur are known in the art. Note that Chheeda [C2, L35-42] teaches "target Eb/No" which is a predetermined threshold/reference).

Chheda teaches wherein if the power control command comprises one bit representing two states of sufficient of insufficient, the PCB's for performing power decrease/increase represent sufficient/insufficient (C2, L42-51 teaches power increase/decrease which is sent as a power control bit(s)) **and** Chheda teaches power

control command comprises two bits representing four states of good, uncertain, pass and bad, the PCB's for performing power decrease are generated only when the command coincides with the information representing whether the previous frame has been transmitted, while PCB's for power increase are generated if not (C2, L42-51 for power increase or decrease AND C4, L66-67 to C5, L160 teaches keeping track of previous frames/CRCs which reads on the claim).

As per **claims 9 and 10**, Chheda teaches wherein the power control command is a data state signal of good' in the second step, and a data state signal of bad, uncertain' or pass' in the third step -- Chheda teaches wherein if the power control command comprises one bit representing two states of sufficient of insufficient, the PCB's for performing power decrease/increase represent sufficient/insufficient (C2, L42-51 teaches power increase/decrease which is sent as a power control bit(s)) **and** Chheda teaches power control command comprises two bits representing four states of good, uncertain, pass and bad, the PCB's for performing power decrease are generated only when the command coincides with the information representing whether the previous frame has been transmitted, while PCB's for power increase are generated if not (C2, L42-51 for power increase or decrease AND C4, L66-67 to C5, L160 teaches keeping track of previous frames/CRCs which reads on the claim).

As per **claim 11**, Chheda teaches forward power control in a mobile system where a mobile terminal generates a power control command based on a received frame [Note: forward power control is disclosed, C1, L55-65], said received frame including a plurality of slots, each of said plurality of slots including power control bits and non-power control bits (C4, L5-19 and L53-67 to C5, L1-14 discloses measuring all bits within a frame, hence PCB and non-PBC bits are included) the method comprising:

A calculator for calculating CNR, CNR being a ratio of accumulated energy value of PCB's in the slots to an accumulated energy value of noise in the slots of the frame and

A control section for generating power control commands based on TCR when the calculated CNR is good, said TCR being a ratio of the accumulated energy value of traffic symbols in the slots to accumulated energy of the PCB's (C1, L66-67 thru C4, L33 teaches Eb/No as a measure of energy-to-noise which reads on the applicant's claim. Note that other measurements are possible including SNR, SIR, Eb/Nt, etc. which are known in the art. Chheda's teachings above read on CNR and TCR as they did in claim 4, just without the reference to CRC).

As per **claim 12**, Chheda teaches detecting whether received data exists while in discontinuous transmission mode, comprising:

A location detector for detecting location of energy of PCBs and a location of energy of non-PCBs of a received signal (C5, L3-5 teaches using all bits within the frame except FQI and encoder tail bits which implies the system can locate any bit it needs to)

A first device measuring energy of a signal corresponding to the location of the non-PCBs outputted from the location detector and for outputting said measure **and** A

second device for measuring energy of a signal corresponding to the location of the non-PCBs outputted from the location detector and for outputting said measure (C1, L66-67 thru C4, L33 teaches Eb/No as a measure of energy-to-noise which reads on the applicant's claim. Note that other measurements are possible including SNR, SIR, Eb/Nt, etc. which are known in the art. While Chheda does not elaborate of more than one measuring device, the examiner interprets one device as reading on two devices since it could be broken into multiple devices for specialization, higher performance, etc.).

Control section for determining whether data exists in the received signal by calculating a ratio of the output of the first energy measuring device to the output of the second energy measuring device (Flow charts shown in figures 2, 3 and 5 are interpreted by the examiner to teach a control section/processor that performs calculations and transmits control signals as necessary).

As per **claim 13**, Chheda teaches claim 12 and a decoder for CRC checks when transmitted data includes CRC (C2, L62-65), wherein control section determines whether or not the data exists with a value of the CRC state (C4, L65-67 to C5, L1-40).

As per **claim 17**, Chheda teaches detecting whether received data exists while in discontinuous transmission mode, comprising:

A location detector for detecting location of energy of PCBs and a location of energy of non-PCBs of a received signal (C5, L3-5 teaches using all bits within the frame except FQI and encoder tail bits which implies the system can locate any bit it needs to)

A first device measuring energy of a signal corresponding to the location of the non-PCBs outputted from the location detector and for outputting said measure **and** A second device for measuring energy of a signal corresponding to the location of the non-PCBs outputted from the location detector and for outputting said measure (C1, L66-67 thru C4, L33 teaches Eb/No as a measure of energy-to-noise which reads on the applicant's claim. Note that other measurements are possible including SNR, SIR, Eb/Nt, etc. which are known in the art. While Chheda does not elaborate of more than one measuring device, the examiner interprets one device as reading on two devices since it could be broken into multiple devices for specialization, higher performance, etc.).

Control section for determining whether data exists in the received signal by calculating a ratio of the output of the first energy measuring device to the output of the second energy measuring device (Flow charts shown in figures 2, 3 and 5 are interpreted by the examiner to teach a control section/processor that performs calculations and transmits control signals as necessary),

a transmitter for transmitting the power control command -- Cheeda teaches reverse link power control for wireless/cellular systems (C1, L10-65) which inherently require transmitters in the mobile phones and base stations.

As per **claim 18**, Chheda teaches claim 17 wherein the control section comprises:

a decoder for CRC checks when transmitted data includes CRC (C2, L62-65), wherein control section determines whether or not the data exists with a value of the CRC state (C4, L65-67 to C5, L1-40).

As per **claim 21**, Cheeda teaches claim 20 wherein the control section comprises:

A second comparator for comparing, if no data exists, accumulated energy of PCB's with a minimum threshold (figure 1 shows prior art including a comparator #115. The examiner interprets one or more comparators as being similar since one can be replaced with multiple comparators for specialization, higher performance, etc).

Control section detects whether data exists in received signal according to the CRC state value, the output of the first comparator and an output of the second comparator (figures 2, 3 and 5 show flow charts which infers a control section/processor).

As per **claim 22**, Chheda teaches forward/reverse power control (title) according to a power control command included in data while in discontinuous transmission mode comprising [Note: forward power control is disclosed, C1, L55-65],:

A power control command demodulator for extracting power control command from the received data (figure 1 shows prior art with power command generator #120 which inherently requires a command demodulator to extract data)

A controller for combining demodulated information and information whether a previous frame has been transmitted (C5, L21-37 teaches multiple CRC's being kept track of, hence a controller would know if a previous frame was transmitted), for generating and outputting PCB's for power decrease only when the two information coincide (C2, L42-51 for power increase/decrease)

A forward transmitter for transmitting data and PCB's under control of controller (Cheeda teaches reverse link power control for wireless/cellular systems (C1, L10-65) which inherently require transmitters in the phone and base stations).

As per **claim 23**, Chheda teaches claim 22 wherein if the power control command comprises one bit representing two states of sufficient of insufficient, the PCB's for performing power decrease/increase represent sufficient/insufficient (C2, L42-51 teaches power increase/decrease which is sent as a power control bit(s)).

As per **claim 24**, Chheda teaches claim 22 wherein if the power control command comprises two bits representing four states of good, uncertain, pass and bad, the PCB's for performing power decrease are generated only when the command coincides with the information representing whether the previous frame has been transmitted, while PCB's for power increase are generated if not (C2, L42-51 for power increase or decrease AND C4, L66-67 to C5, L160 teaches keeping track of previous frames/CRCs which reads on the claim).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2-4 and 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Chheda in view of Wheatley III et al. US Patent 5,461,639 and Bartelme et al. US Patent 6,445,930 (hereafter Wheatley and Bartelme).

As per **claim 2**, Chheda teaches claim 1 comprising:

Detecting CRC information in the frame and Performing CRC check (C4, L66 and C5, L21-25 teach the use of CRC which is known in the art)

But is silent on Generating power control reduction command if CRC indicates no errors.

Wheatley teaches power control and based on the error rate of the received PCBs, an increase/decrease of transmit power is communicated (abstract). **Bartelme** teaches a variation in the use of the CRC whereby the Signal-to-noise ratio can be measured in a number of ways such as by approximation from the bit error rate. For example, the system could monitor the cyclic redundancy code (CRC) and estimate signal-to-noise ratio from the number of errors detected. Alternatively, or in addition, convolutional encoding and Viterbi decoding can be used to estimate the error rate. With this technique, the signal is convolutionally encoded at the transmitter and sent to the receiver. At the receiver, the signal is decoded and then re-encoded. The error rate can then be estimated by comparing the re-encoded data with the received data. (C12, L55). One skilled in the art realizes that if the system is experiencing multiple frames with CRC errors, the power needs to be adjusted. Likewise, no power adjustment is required if no CRC errors are being experienced.

It would have been obvious to one skilled in the art at the time of the invention to modify Cheeda, such that power is reduced if no CRC errors, to conserve power since there are no errors at the current power level and there is no need to increase power.

As per **claim 3**, Chheda teaches claim 2 **But is silent on** comprising generating power control command for increasing forward transmit power if CRC indicates errors in the frame.

Wheatley teaches power control and based on the error rate of the received PCBs, an increase/decrease of transmit power is communicated (abstract). **Bartelme** teaches a variation in the use of the CRC whereby the Signal-to-noise ratio can be measured in a number of ways such as by approximation from the bit error rate. For example, the system could monitor the cyclic redundancy code (CRC) and estimate

signal-to-noise ratio from the number of errors detected. Alternatively, or in addition, convolutional encoding and Viterbi decoding can be used to estimate the error rate. With this technique, the signal is convolutionally encoded at the transmitter and sent to the receiver. At the receiver, the signal is decoded and then re-encoded. The error rate can then be estimated by comparing the re-encoded data with the received data. (C12, L55). One skilled in the art realizes that if the system is experiencing multiple frames with CRC errors, the power needs to be adjusted. Likewise, no power adjustment is required if no CRC errors are being experienced.

It would have been obvious to one skilled in the art at the time of the invention to modify Cheeda, such that power is increased if CRC errors, to provide improved RF communications through increased transmit power.

As per **claim 4,** Chheda teaches reverse/forward link power control in a mobile system (title) where a mobile generates power control commands based on a received frame [Note: forward power control is disclosed, C1, L55-65], said received frame including CRC bits and a plurality of slots (C4, L66 and C5, L21-25 teach the use of CRC which is known in the art), each of the slots including PCBs and traffic symbol bits (C4, L5-19 and L53-67 to C5, L1-14 discloses measuring all bits within a frame, hence PCB and non-PBC bits are included), comprising

Detecting CRC bits and generating a power control decrease command if CRC bits are detected (C4, L66 and C5, L21-25 teach the use of CRC which is known in the art)

Generating, if CNR is good, whether traffic symbol bits exist in slots of frame based on traffic-to-control ratio (TCR), TCR being a ration of accumulated energy value of traffic symbol bits in the slots to the accumulated energy value of the PCB's (C1, L66-67 thru C4, L33 teaches Eb/No as a measure of energy-to-noise which reads on the applicant's claim. Note that other measurements are possible including SNR, SIR, Eb/Nt, etc. which are known in the art).

Generating, if traffic symbols exist, forward power increase (C2, L52-57 and/or C3, L9-15. Note that forward power control works in a similar manner as is disclosed by Chheda above. One skilled in the art realizes that if power control makes sense while transmitting data, otherwise it is wise to conserve mobile terminal power).

But is silent on

If CRC bits are not detected, determining whether a control-to-noise ratio (CNR) is good or bad, said CNR being a ratio of accumulated energy value of the PCB's in the slots of said frame to accumulated energy of noise in the slots

Generating, if traffic symbols do not exist, a forward link power decrease

Wheatley teaches power control and based on the error rate of the received PCBs, an increase/decrease of transmit power is communicated (abstract). Bartelme teaches a variation in the use of the CRC whereby the Signal-to-noise ratio can be measured in a number of ways such as by approximation from the bit error rate. For example, the system could monitor the cyclic redundancy code (CRC) and estimate signal-to-noise ratio from the number of errors detected. One skilled in the art realizes that if the system is experiencing multiple frames carrying data with CRC errors, the

power needs to be adjusted. Likewise, no power adjustment is required if no data is being transmitted and/or if no CRC errors are being experienced.

It would have been obvious to one skilled in the art at the time of the invention to modify Cheeda, such that if CRC bits are not detected then determining CNR good/bad, to provide means for determining how good/bad the RF channel is and then decreasing power if no traffic symbols exist (since no data was transmitted).

As per **claim 8**, Chheda teaches a method of controlling reverse/forward link transmission power in a mobile system (title), where a mobile terminal generates a power control command based on a received frame [Note: forward power control is disclosed, C1, L55-65], capable of discontinuous transmission mode comprising;

First step checking whether a previous frame has been transmitted when a power control command is received from the terminal (C5, L21-37 teaches multiple CRC's being kept track of, hence one would know if a previous frame was transmitted)

Second step of transmitting, if a previous frame has been received has been transmitted, PCB's for power decrease if command received from terminal indicates data has been received in a good state, Third step of transmitting, if previous frame has been transmitted, PCB's for power increase if data received in a bad state (C2, L52-57)

But is silent on Fourth step if previous frame has not been transmitted, PCB's for power decrease if no data has been received

Fifth step if previous frame has not been transmitted PCB's for power increase if data has been received.

Chheda (C2, L13-25) teaches sustaining a certain FER and GOS. Providing less translates into dropping calls. The examiner interprets this as reading on the claim since FER/GOS involve determining if a channel is "good" and continually monitoring for fading/deterioration which then involves handoff.

Wheatley teaches power control and based on the error rate of the received PCBs, an increase/decrease of transmit power is communicated (abstract). **Bartelme** teaches a variation in the use of the CRC whereby the Signal-to-noise ratio can be measured in a number of ways such as by approximation from the bit error rate. For example, the system could monitor the cyclic redundancy code (CRC) and estimate signal-to-noise ratio from the number of errors detected. One skilled in the art realizes that if the system is experiencing multiple frames carrying data with CRC errors, the power needs to be adjusted. Likewise, no power adjustment is required if no data is being transmitted and/or if no CRC errors are being experienced.

It would have been obvious to one skilled in the art at the time of the invention to modify Cheeda, such that fourth/fifth steps are performed, to provide increase/decrease of power depending if data is/is not transmitted.

Claims 14-16 and 19-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Chheda in view of Amada et al. US Patent 5,559,804 (hereafter Amada)

As per **claim 14**, Chheda teaches claim 12 wherein the control section comprises:

An energy ratio calculator which calculates ratio of first-to-second measuring devices (C1, L66-67 to C2, L1-8 teaches Eb/No ratio)

A first comparator for comparing output of ratio calculator with a predetermined threshold value, threshold value determined according to the existence/non-existence of data (C2, L35-42 teaches "target Eb/No" which is a predetermined value)

But is silent on A controller for detecting whether data exists in the received signal according to the output of the comparator

Amada teaches a wireless communications system that makes decisions based upon whether data exists to send or not (C11, L15-25).

It would have been obvious to one skilled in the art at the time of the invention to modify Cheeda, such that a controller detects whether data exists in the signal, to provide means for understanding if data was/was not sent and if power can be reduced if it was not sent.

As per **claim 15**, Chheda teaches claim 14 and a decoder for CRC checks when transmitted data includes CRC (C2, L62-65), wherein control section determines whether or not the data exists (C4, L65-67 to C5, L1-40).

As per **claim 16**, Cheeda teaches claim 15 wherein the control section comprises:

A second comparator for comparing, if no data exists, accumulated energy of PCB's with a minimum threshold (figure 1 shows prior art including a comparator #115. The examiner interprets one or more comparators as being similar since one can be replaced with multiple comparators for specialization, higher performance, etc).

Control section detects whether data exists in received signal according to the CRC state value, the output of the first comparator and an output of the second comparator (figures 2, 3 and 5 show flow charts which infers a control section/processor).

As per **claim 19**, Chheda teaches claim 17 wherein the control section comprises:

An energy ratio calculator which calculates ratio of first-to-second measuring devices (C1, L66-67 to C2, L1-8 teaches Eb/No ratio)

A first comparator for comparing output of ratio calculator with a predetermined threshold value, threshold value determined according to the existence/non-existence of data (C2, L35-42 teaches "target Eb/No" which is a predetermined value)

But is silent on A controller for detecting whether data exists in the received signal according to the output of the comparator

Amada teaches a wireless communications system that makes decisions based upon whether data exists to send or not (C11, L15-25).

It would have been obvious to one skilled in the art at the time of the invention to modify Cheeda, such that a controller detects whether data exists in the signal, to provide means for understanding if data was/was not sent and if power can be reduced if it was not sent.

As per **claim 20**, Chheda teaches claim 19 wherein the control section comprises:

A decoder to perform CRC if CRC is included with received data (C4, L65-67 to C5, L1-40).

But is silent on Wherein the controller detects whether data exists in the received signal according to an output of the decoder and the output of the first comparator

Amada teaches a wireless communications system that makes decisions based upon whether data exists to send or not (C11, L15-25).

It would have been obvious to one skilled in the art at the time of the invention to modify Cheeda, such that a controller detects whether data exists in the signal, to provide means for understanding if data was/was not sent and if power can be reduced if it was not sent.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 703-306-5426. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 703-308-5318. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stephen D'Agosta

Primary Examiner
5-24-05